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ESSAY ON THE ADVANTAGES OF A VEGETARIAN DIET.

BY

MR. G. C. DEB, B.A.,

Head Master, Government High School, Barabanki.

(3RD PRIZE WINNER AND SILVER MEDALIST.)

BEING A PRIZE ESSAY
OF ITS SCHEME No. 4.

Published by

SHRI JIVA DAYA GNAN PRASARAK FUND,

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PREFACE.

It is with great pleasure that I state, that Shri Jiva Daya Gnan Prasarak Fund founded about three years ago and which owed its existence to the favour of the Almighty Lord, combined with the valuable donations of generous men, has successfully and without impediments, accomplished its objects, and I am therefore greatly obliged to the public for giving us encouragements.

The object of this Fund is chiefly to lessen the slaughter of animals for human diet, not only on the moral ground but also, by proving medically the unwholesomeness of flesh-eating and the economy resulting from the abundance of animals. It is a deplorable fact that millions of lower animals are killed every day for the purpose of food and this *prima facie*, is sufficient proof of the present state of Society, when keen competition prevails and thousands of men hardly know where to find a morsel of bread.

Dearth, as we all know, is due to the scarcity of food in proportion to the number of men wanting it. Now has come a time when the prices of all the necessary articles of food are more than double the respective prices, a few years ago. The animals which if spared would be useful to man for agricultural purposes, thereby aiding and facilitating man and nature, are killed in great number, so that man has to work hard and that too, with great decrease in the product and thus in an age when Malthusians would be looking with alarm on the condition of the world, the mouths have increased quite disproportionately with the growth of Agricultural Stock.

The cow and the buffalo give us milk, a substance in itself so tonic that man can live on milk diet alone. The more the supply of milk the more happy are the men living upon it. But we find thousands of kine and buffaloes are slaughtered every day, and the milk supply is considerably reduced. The rise in price and the adulteration are due to no other causes than the shortage of the animals, supplying milk.

Men are not created to live for pleasure alone. A real man is he, who performs his duty and in my opinion it is the duty of every man to spare the lives of the dumb and innocent animals, whose services we enjoy and realise in food, clothings, travelling, &c.

The formation of man's structure clearly shows as eminent doctors have pointed out that man is not meant to be a carnivorous animal, and that many diseases are the result of meat-diet.

Thus in order to prevent the slaughter, for the benefit of poor people and helpless widows, and thereby cheapening the supply of milk, ghee, curd, &c., this Fund has been started by the noble efforts of Mr. Lakhshankar Laxmidas, a Nagar humanitarian of Junagad, for whom no praise can at all be adequate. The chief aims of the Fund are :—

- (1) To lessen the daily slaughter of millions of animals in India.
- (2) To try to make flesh-eaters realise the diseases, the drink-crave, and expensiveness resulting from the meat diet.
- (3) To purchase from England and also to publish in Bombay Humanitarian literature for broadcast free distribution among the people of India.
- (4) To prove to flesh-eaters the advantages of vegetarian diet from the medical point of view.

Thus our object is to distribute the literature broadcast to assure men of the evils of animal diet and the advantages of vegetarian diet, and also to furnish men with the proper and argumentative understanding in the subject, so that our readers may be able to expound the benefits of vegetarian diet to their friends and others with whom they come in contact. For this object we had called for an Essay on this subject from the students of the Matric classes in Bombay High Schools and 150 rupees were distributed among good essayists in the year 1911.

Dr. Jehangir K. Dāji, L. M. & S., Messrs. Jehangir J. Vimadalal, M.A., LL.B.; Solicitor, Khurshedji J. B. Wadia, and other Parsi gentlemen have by their sincere exertions brought about a change in the selections of food among many of the civilized Parsees, and to encourage the Parsi boys and girls in this respect a sum of Rs. 100 was given by this Fund to the Parsi Vegetarian and Temperance Society which held an examination and distributed the the above sum as prize. This is to be considered as our Prize Essay Scheme No. 2.

After this we devised a third prize scheme open only for Medical Graduates and Veterinary Surgeons and prizes to the value of Rs. 500 are to be given to the first four successful candidates and the essays shall be examined by the following eminent gentlemen in England.

- (1) Sidney H. Beard, Esqr.
- (2) Sir William Ernshaw Cooper, C.I.E.
- (3) Dr. Robert Bell, M.D., F.R.F.P.S.
- (4) Dr. Josiah Oldfield, M.A., D.O.L., L.R.C.P., L.R.C.S., &c.
- (5) Percy E. Beard, Esqr.

After we announced this scheme to the public, we received innumerable applications from graduates and other English knowing persons to allow them to try an essay on the subject, and we thus opened the 4th scheme named "All India Prize Competition" to all English knowing ladies and gentlemen in India and a board of Examiners consisting of the following notables in the Bombay Presidency was appointed to examine these essays.

- (1) Rao Bahadur Dr. N. B. Naik Dandekar, L.M. & S., J.P., &c.
- (2) Prof. Louis Peltier, B.A., B.Sc.
- (3) Dr. Jehangir J. Vimadalal, M.A., LL.B., Solicitor.
- (4) Dr. Husseinibhai A. Nakhoda, L.M. & S., J.P.
- (5) Dr. Purushottamrai T. Mankad, B.A., LL.B., Solicitor.
- (6) Mr. H. E.

Bryning, Ag. Manager, Messrs. Thacker & Co. (7) Dr. Kalliandas J. Desai, B.A., L.M. & S. (8) Mr. Nowrosji H. Cooper, B.A. (9) Prof. Viccaji E. Vakharia, G.B.V.C. (10) Mr. Manilal H. Udani, M.A., LL. B., F. L. L. C. (11) Dr. Tribhuwandas L. Shah, L.M. & S. (12) Dr. Namchand K. Modi, L.M. & S.

Thus in this scheme more than 100 candidates sent up their essays for consideration and examination by the Board mentioned above. These candidates comprised men of great worth,—many Masters of Art, Bachelors of Art, Licentiates of Medicine and Surgery, and other ordinary ladies and gentlemen took part in the said examination and submitted their writings in this competition.

The result was announced by the Board of the examiners in the end of April 1913 and the following ladies and gentlemen received prizes in order of merit :—

- (1) Mr. Pandit Bishandas, B.A., Ferozepore, Rs. 100 including Gold medal and cash.
- (2) Dr. S. C. Chatterji, B.A., L.M. & S., Calcutta, Rs. 75 including Gold medal and cash.
- (3) Mr. G. C. Deb, Barabanki, Rs. 60 including Silver medal and cash.
- (4) Mr. P. K. Mehta, B.A., Surat, Rs. 55 including Silver medal and cash.
- (5) Mr. S. M. Phadke, B.A., Poona, Rs. 50 including Silver medal and cash.
- (6) Mr. Mahadev B. Kanthariakar, Ahmedabad, Rs. 45 only.
- (7) Messrs. V. R. Gopalachari of Hyderabad Deccan and V. D. Satghare of Baroda, each Rs. 20.
- (8) Messrs. Burjor R. Doctor of Bombay and P. A. Mahale of Bombay, each Rs. 15.

(9) Rao Bahadur Dullabji D. Ved, Rajkot, and Mr. Yudhishthir S. Mehta, Ahmedabad, each Rs. 12-8-0.

(10) Miss K. Gomes, L. M. & S., Bombay, and Miss Shewan-tibai K. Dhurandhar, Hyderabad Deccan, each Rs. 10.

The cause of vegetarian diet is undoubtedly a noble cause and we appeal to all right thinking men to realise its utility and goodness. The present Essay is calculated to meet a great requirement of humanity at large. It is written on broad lines and the author has discussed the subject from a social and scientific point of view, and has answered all the known objections raised on the subject of vegetarian diet and has proved his point from medical science as well as from History and Ethics. If this work succeeds to any extent in checking the slaughter of innocent animals, we shall think our labours amply rewarded and the purpose of the Fund realised to that extent. We simply pray that all men open to conviction or argument may read the subject matter calmly and may consider it in a solemn way. If the readers of this Essay act thus, we are confident that it shall impress upon them the great evils arising from the use of animal diet. It shall convince them at the same time the great good that can accrue to our race by taking vegetarian diet. With these hopes and thoughts we give this Essay to the world, and also hope, that it will meet with due appreciation at the hands of all thoughtful persons.

In conclusion, it gives me a great pleasure to express my thanks to the examiners who had kindly undertaken to examine the Essays and announce the prizes at the cost of their valuable time.

SHRI JIVA DAYA GNAN }
PRASARAK FUND,
309, Shroff BAZAR,
Bombay, No. 2. }
31st December 1913. }

LALLUBHAI GULABCHAND
JHAVERI,
Hon. Manager,
S. J. D. G. P. Fund, Bombay.



Mr. Girish Chandra Deb, B.A.,
of Barabanki.

The Advantages of a Vegetarian Diet:

BY

MR. G. C. DEB, B.A.,

Head Master, Government High School, Barabanki.

In Le Bourgeois Gentilhomme Mons. Jourdain speaking to his Professor expresses wonder at the fact that he has been speaking prose more than 40 years without knowing what it is. (Par ma fois il y a plus de quarante ans que je dis de la prose, sans que j'en susses rien ; et je vous suis le plus oblige du monde de m'avoir appris cela). The incomparable Moliere has here painted a side of human character of ignorance or weakness which though it is universal is not so noticeable. And yet the humour of the scene seems too flat rather too subtle to be properly appreciated, and Moliere is supposed to have given a grotesquely exaggerated view of a rich countryman trying to enter the beau monde. We are more the slaves of habit than of deliberateness, and we do a thing more from force of habit than from knowledge of the results of our action. Four hundred years before Christ, Socrates, the famous Athenian philosopher, taught his people that they did not know the meaning of the most common words they used. He taught them to weigh their words well, and to understand their significance before they used them. And for all his pains this great philosopher, this torch of learning in Greece was mercilessly poisoned in his old age. The saying of M. Jourdain might well be adapted and put into the mouth of any man to-day with regard to his dietetic arrangements. We suckle or eat ever since our birth and yet we do not know what food is good for us ! Hunger is a constitutional desire and we have in our system a complicated machinery of taking our food, digesting it, assimilating a portion of it, and rejecting the refuse. Between the salivary glands and the rectum there are the stomach, the gall bladder, the pancreas, the liver, the duodenum, &c.,

all for the purpose of helping in the digestion of food. F. M. Bergoine, a French savant, holds that the object of eating food is no more than to impart heat and energy to the system, and that this purpose may well be served by Electricity. He holds therefore that food is not indispensable to life, and that man may well live upon electric food, which will not clog his bodily machinery with undigested or undigestible substances. If this theory holds good the problem of "Foods" has been solved most satisfactorily, and the conflict between the two classes, *viz.* meat-eaters and vegetarians has been settled once for all. But M. Burgoin's theory is yet in an elementary stage. His experiments have been made upon those who have not changed their ordinary diets. He has not therefore been able to prove the crux of the problem, *viz.* that man may feed upon electricity as a substitute for food-stuffs. As long as this point is demonstrated the conflict between meat-eaters and vegetarians remains undecided. Vegetarians have therefore to establish that a bill of fare where meat plays no part is as conducive to muscle-building and bodily energy as a diet of meat; that it is more easily digested, and is therefore more nourishing than meat; and that it is more economical and at the same time more varied and savoury than meat; and that it commends itself by its simplicity, cheapness and absence of gastric complications.

In the following pages an attempt has been made at establishing the superiority of vegetarianism over meat-eating, and as this view has been based not merely upon the writings of standard authors, but upon personal experience of a mixed vegetarian and meat-eating diet, of diet of bread and rice and dal principally and meat of goat and sheep and fish occasionally and frugally, the value of this essay will become manifest, while its point will not be lost upon those who enjoy the zest of dishes of cabobs and outlets, and pay the penalty by giving reluctant fees to doctors for their "nauseous draughts." If this essay appeals to the feeling of meat-eating epicures and shikaris and dissuades them from their meat-eating habit, my object will be served, and I shall consider myself sufficiently repaid.

We may live without poetry, music and art:
 We may live without conscience and live without heart:
 We may live without friends, we may live without books
 But civilised man cannot live without cooks.
 He may live without books—What is knowledge but grieving ?
 He may live without hope—What is hope but deceiving ?
 He may live without love—What is passion but pining ?
 But where is the man that can live without dining ?

Owen Meredith.

In the Bhagwad Gita, Discourse XVII, Lord Krishna thus distinguishes the diet of the sattvie (the pure), the Rajasic (the passionate) and the tamasic (the dark) three classes into which humanity is divided:—

The foods that augment vitality, energy, vigour, health, joy and cheerfulness, delicious, bland, substantial and agreeable are dear to the pure. (8).

The passionate desire foods that are bitter, sour, saline, over-hot, pungent, dry and burning and which produce pain, grief and sickness. (9).

That which is stale and flat, putrid and corrupt, leavings also and unclean, is the food dear to the dark. (10).

The Bhagwad Gita—Mrs. Besant's
Translation.

And in the Bible we find:—

And God said "Behold I have given you every herb bearing seed which is upon the face of all the earth, and every tree in which is the fruit of a tree yielding seed, to you it shall be for meat."

Genesis Chap. I-29.

Every human act, every movement of our muscles causes some waste. Even the slight exertion of speaking or laughing causes some waste. We are unable to perceive it at first, but we do feel it when

we speak or laugh in spite of ourselves. Food is necessary to make up for the waste of our bodies, for no living being except perhaps a Yogi in a state of samadhi can live without food. (Read for instance the account of Baba Haridas and Maharaja Ranjit Singh, the ruler of the Punjab).

The principal elements required for the composition of the human body are carbon, oxygen, hydrogen and nitrogen. These are classified as organic bodies, being the most essential components of the tissues of the animal body. In a man weighing 154 lbs. these elements are in the following proportions.—

Oxygen 111 lbs. Hydrogen 14 lbs. Carbon 21 lbs. Nitrogen 4 lbs.

The inorganic bodies found in our system are comparatively very little. They are phosphorus, sulphur, calcium, sodium, iron, potassium, fluorine and silicum. Or to put it in other words our body is composed of—

1. Organic Substances *e.g.* (a) albuminous and nitrogenous substances, (b) fats, (c) carbohydrates that is starch and sugar.
2. Inorganic substances *e.g.* (a) water, (b) mineral salts *e.g.*, common salt, lime salts.

Of these substances energy and heat are due to diet composed of (a) nitrogenous substances, (b) carbohydrates, (c) fats, while the waste of tissues is made up by (a) nitrogenous substances, (b) mineral matters, (c) water.

Albumen which is well known as the white of the egg is virtually the same as vegetable albumen and is easily digested and assimilated forming new combinations principally helping the formation of nerves. Nitrogenous substances include albuminous substances and help the flow of our gastric juice. They are dhal, beans, peas, curds, fish, meat and eggs. The dhal of aksa or Khesari is rather too full of nitrogen to be

ALBUMEN—	
C. 53.4	
H. 7.0	
O. 22.1	
N. 15.7	
Sulphur.	
2.0	
Dr. Edward	
Smith.	

nutritious. Major General Sleeman says that in the severe famine of 1842 or thereabout he found whole villages in the Central Provinces rendered paralytic by the use of this dhal as their only food.

Carbohydrates—These are the same as sugars and starch. The liver transforms the sugar into animal starch which gives energy to the muscles. Carbohydrates are assimilated with ease and serve to prevent the proteids and fats from being consumed too quickly. It is necessary that they should be well chewed in order that the saliva might act freely on them. The following is a list of carbohydrates, and they exist in nearly all our articles of vegetable food.

CANE-SUGAR—
C. 40
H. 6'6
O. 53'3
Dr. Edward
Smith.

Bread, rice, sugar, maize or Indian corn, millets, barley, peas, beans, potatoes, lentils and oatmeals. It is almost pure in arrow-root, sago and tapioca.

Fats promote the flow of biles and pancreatic juice and give more energy than an equal amount of carbohydrates. Milk, ghee, oil and meat-fat and even wheat or-rye breads and potatoes belong to this list. Butter is the most easily digestible of all articles of this description. Fats are themselves not easily digested, they rather assist in the digestion. Cod liver oil is given not so much for the quantity of fat it contains as "to promote the digestion and assimilation of other substances" ("Doctor at Home" by George Black, p. 329).

FATS—
C. 77
O. 11
H. 12
Dr. Edward
Smith.

Milk contains all the five necessities required for the human system. Urea is increased by taking milk or cheese. For a child its mother's is the best milk. She-ass's milk is the next best food, she-goat's milk comes next, while cow's milk is somewhat richer than any of the above and buffaloe's milk is richer still. The following precautions in milking are taken from Dr. Bedford's Elementary Hygiene.

MILK—
 Water 86·0
 Nitrogenous 4·1
 Sugar 5·2
 Fat 3·9
 Salt 0·80
 Dr. Edward
 Smith.

1. Milk should not be taken from a diseased cow.
2. The milkman should have no dirty clothes about him when milking the cow and must be neat in person.
3. The vessel used for milking purposes must be well washed and clean.

4. Milk should not be used unboiled.

Milk is the chief constituent of a good dinner in India. It is used in various ways. Some people are under the deluded impression that milk is more nutritious when its “foaming streamlets” come straight from the cow’s udder into the mouth. (1) but as this contravenes one of the precautions laid down by Dr. Bedford it should not be resorted to. The method is as dirty as it is rude and unsanitary. Milk must be strained through a clean fine cloth. If this cloth is examined after the milk has been strained a quantity of impurity like dust and hair will be noticed. These will go unobstructed into the stomach if milk is not strained. Milk is used (1) Katchcha or unboiled or fresh. This is the way goat’s milk is taken by spermatorrhæic patients. Fresh buffaloe’s milk has a strong animal odour and needs to be boiled to be purged of its smell. (2) Boiled milk. This milk is either drunk warm or is allowed to cool down and is then drunk. Of the two the latter process seems to be preferable. (3) Cream is skimmed from milk and taken separately from milk: but cream with some milk is more likely digested than cream without milk. (4) Curds are formed from cream, and the whey which is thus separated is

(1) I saw a healthy old man at Bareilly in Rohilkhand Division in 1897 who drank milk in this way every morning and who was supposed to enjoy good health at an advanced age only in virtue of this practice: while my father saw a Nawab in pre-mutiny days at Farrukhabad who in his 80th year kept a lot of wet-nurses to give him suckle and looked hale and hearty. He was a great Hakim in the service of the ruler of Oudh, and by his merit rose to be his chief minister: but he subsequently incurred his wrath and was banished from Oudh. He settled in Farrukhabad with his ill-gotten millions; lived very sumptuously and died before the mutiny.

used separately. But whey produces flatulency and curd is hard of digestion. The two must therefore be combined when used. (5). *Rabri* is formed from milk and is delightful eating. (6) *Khoa* is formed from milk and is the substance from which a large variety of sweetmeats is made. (7). *Chhana* is also a produce of milk and is the source of a lot of sweetmeats. (8). Butter and *Mattha* from which (9) *Ghee* is produced, all these substances claim their origin from milk. Then there are various preparations of milk *e. g.* *Payesh* or *Kheer* of rice or *Suji*, or *Chhana* or *Cheera* or *Kamala* orange or *Sakar-kand* : also vermicelli. The delicious Bengali sweets are all formed from khoa or kheer and chhana : and U. P. pendas and barfis are nothing but khoa well-turned without sugar in a pan over fire. Cheese which is a delicacy and is a producer of urea is also a product of milk, while a variety of puddings and even *Sheer-mal* (milk-bread) and *mohan-bhogs* have milk for their chief ingredient. It must be remembered that it is buffalo's and cow's milks which are used in this way. The milks of other animals like the goat, the sheep, the camel, the mare, cannot compare with them both as regards their taste and their nutritive property. Camel's milk is drunk only by camel men in India, and in Arabia by all. One camel gives on an average 2 small gharas of milk. This is said to be poor in fat and brackish in taste. No Hindu except the most impecunious will drink camel's milk, because it is said to breed worms in it if it is left unboiled for even half an hour. Kinglake saw a vizend old sheikh in the heart of a vast desert who was subsisting for 6 months totally upon camel's milk. Mare's milk is used in Tartary and is fermented into drink. The army of Chengiz Khan, the great Tartar conqueror, consisted entirely of horsemen (*vide* Major Raverty's *Tabqate Nasiri*) who fought on horseback, ate horse's flesh, drank mare's milk and regaled themselves with koumiss the drink extracted from this milk. Sheep's milk is produced in too small a quantity to be sold in the market. It is used medicinally for ulcers in the mouth of a baby. Ass's milk is also too scanty and too thick to be collected. It is given to weak or ricketty babies or motherless children and is highly nutritive. (1). It is an excellent substitute for mother's milk.

(1) Abdul Hamid, the deposed Sultan of Turkey, drinks she-ass'milk and is still hale and hearty though on the shady side of 60.

Water (1) is next to air the material most necessary for human existence. It ought to be pure as impure water causes bad diseases *e.g.* enteric fever. Water constitutes about 87/100ths of the whole weight of our body. It is found in all kinds of foods and serves various purposes. It maintains "a due bulk of blood and the structures of body : keeps substances in solution or suspension whilst moving in the body : supplies elements in the chemical changes of the body : enables the waste material to be carried away from the body : discharges superfluous heat by transpiration through the skin and by emission through other outlets : and supplies in a convenient form heat to or abstracts heat from the body." (Foods by Dr. Edward Smith, International Scientific Series, Part II, p. 269). Water is also necessary to wash off impurities which being accumulated will poison the system. It should be taken in moderate quantity and after meals, as too much of it takes away the heat, prevents the pepsin from acting, drives the blood out of the walls of the stomach and lessens the amount of gastric juice poured out. Pure water is the best drink of all, and next to it are aerated waters. Alcohol is not a healthy drink, and one indulging in it is apt to degenerate to excesses. It is better to avoid it like fire. Mineral Salts—These include common salt as also lime salts, potassium, sodium and iron—salts, silica and organic salts as in fruits. These acids go to form the acid of the gastric juice and are thus promotive of digestion; sodium chloride or common salt improves the flavour of our dish and quickens our appetite. Iron and potassium enrich the red cells of the blood and build up muscles. Fruits and vegetables are rich in mineral salts. Dyspepsia resulting from confirmed meat-eating is successfully got down by a rather copious use of fresh ripe fruits.

Note.—It may not be out of place to make a few suggestions regarding the up-keep of cattle which are deteriorating or disappearing rapidly from India. As milk forms the staple of our food it is necessary that we should attend to this very important question as

(1) There is no bird or beast which can live without water. The swallow is a solitary exception among birds and the *Shanda* among beasts. The swallow's thirst is very likely appeased by the water in its food, *viz.*, insects and maggots.

early as possible. The best cattle in India are found in Hissar, Mysore and Manipur while those of the United Provinces are of average quality.

The Bengal cows are stunted in growth and poor in condition and yet the Gayal and the maithan so highly spoken of by Marco Polo are natives of Bengal, while Bengal buffaloes still maintain their reputation. In the U. P.—I cannot vouch for any other province but Bengal from personal experience—there is neither fodder nor pasture for cattle. Every village is recklessly cultivated up to its very walls, thus reducing the area of pasture in the neighbourhood. It is the duty of District Boards and Municipal Boards in these Provinces to awake from their slumber and do something for feeding our cattle which are our faithful servants—nay faithful friends and companions. The Hindu religion, of which I profess myself to be a feeble unit, with its usual sense of thankfulness, has invested the cow, which feeds us with its milk like mother, with the odour of sanctity. The question naturally arises “why is not the buffalo regarded as equally sacred?” The answer is simple. The cow will allow herself to be milked even when she is hungry without any regard for her own famished state, while the buffalo will never endure such a treatment. The latter will not suffer her own young one to come near her until her hunger is satisfied. This motherly behaviour of the cow entitles her to the rank of mother, and the Hindu calls her “Gou Mata.”

The Cereals.

The vegetarian dietary is composed of cereals, vegetable foods and fruits. “The cereals have been the sustenance of a large part of mankind in the past and are still the foods of the great majority. It is only in a few countries where flesh-eating has been carried to great excess that they have fallen to comparative neglect.” (Diet and Food by Dr. Haig, p. 54). Cereals are good foods for training, because they give out a steady supply of albumen, force and urea over a series of hours and their salts act as stimulants to digestion. (Diet and Food by Dr. Haig, p. 105). Milk is an indispensable article of diet, as I have shown above, and is claimed by some meat-

eaters to be a non vegetarian diet. But this is straining the point too far; at least it appears so to a lay mind like mine. Among cereals rice and wheat come first and foremost and then the Indian corn and millet.

Rice(1) is the staple food in Bengal, Burmah and that part of Madras which lies along the coasts of the Bay of Bengal and the Arabian sea; and of this crop hundreds of varieties are grown in Bengal, which produces more than half the whole produce of India,

RICE.	
Water ...	13'0
Nitrogenous ...	6 3
Starch ...	79'1
Sugar ...	0 4
Fat ...	0'7
Salts ...	0'5

Dr. Edward
Smith.

and Burma together. There is a species of rice said to be grown on a very small plot in Rawalpindi which is highly aromatic, and the grains of which when cooked assume a ring-like appearance. This, as I am told, is reserved for the table of the King-Emperor and the Viceroy but is not sold in the market. Two or three ounces of this rice will

when boiled according to instructions fill a whole average sized batloi (pot). The first class rice of Pilibhit in the U. P. as also the Kamini rice of Bengal possesses some of these qualities. There is the rice the grains of which are small and almost round, known as the *badal phuee* rice. Then there is the *atap*, the *chini shakkar*, the *bank tulshi*, the *Daood khani*, the *nawab pasand*, the *badshah bhog*, the *balam*, etc., etc. Rice is evidently accorded a higher rank by the Hindus than wheat. It is given as *naibedya* to the diety which wheat is not, while its preparations beat those of any cereal in the number of their varieties.

Rice (1) is more easily digestible the older it is. 2 years old rice is better than one year old one while 3 years old rice is better than either. 10 years old rice is given to very anæmic patients of diarrhoea. Rice must be cleaned of its husks. As normal diet rice must be taken with *dal* in order to contribute to the formation of flesh. Gruel or the water in which rice has been boiled had better

(1) Rice is produced chiefly in India and further India, but recently the Americans have been successful in raising this crop in Florida. A Hindu preacher of Vedantism once gave to a man at Jaffa in Turkey, a dish of cooked rice. This man praised God with raised hands and blessed the land which yielded such an excellent crop.

not be thrown away. It is a mistake therefore to have the rice washed after it has been cooked. This makes the dish look clean at the expense of its nutrition. Water may be taken in the pot in such proportion that all of it is absorbed as soon as the rice is cooked. In order that its grains may appear separate, a little quantity of *ghee* may be added to the boiled rice and the pot well shaken. There will then be no gruel left to be poured out. This sort of rice (*bhat*) is cooked by the Bengali when he is in mourning and lives upon *hobbishshee*. It is rather hard of digestion and is therefore prescribed for one meal only per diem. Rice is richer than wheat, maize or millet in carbohydrates but poorer in fats or proteids. There are two ways in which rice is husked. (1) Rice is kept steeped in water about one week then subjected to a current of steam, and finally sun dried and husked. This is the *atap* rice. (2) Rice is boiled in water and then sun dried and husked. This is the *balam* or *sidha* rice. There are various productions of rice. It may be eaten as rice or *bhat* or it may be prepared into *cheeray*,

(1) Pulao is derived from *pal* = meat + *anna* = cereal, and as its etymology denotes is a preparation of rice mixed with fish or meat. It is usually believed to have been imported by the Musalmans who learnt it from the Epicurean Persians whose ancient kings Jamshed and Dara are renowned for their sumptuous tables. But its Sanskrit etymology points to its Indian origin. And yet vegetarian dietary was evolved in India as the result of Vedantic philosophy centuried before Christ. Even in the old tale of Perseus we find Andromeda speaking to Perseus : "And I stand bound here, hapless that I am, for the sea-monster's food, to atone for my mother's sin. For she boasted of me once that I was fairer than Atergatis, Queen of the fishes ; so she in her wrath sent the sea floods and her brother the fire king, sent the earthquakes and wasted all the land and after the floods a monsterbred of the shine, who devours all living things. And now he must devour me, guiltless though I am — me who never harmed a living thing, nor saw a fish upon the shore but gave it life and threw it back into the sea ; for *in our land we eat no fish*." Mr. H. B. Coterill in his edition of Kingsley's *Heroes* thus comments upon this passage : "The legend of Cepheus and Perseus was probably borrowed by the Greeks from the East, probably through the Phœnicians (unless indeed they brought it themselves from their Eastern home)." As India is the land where the theory of Transmigration of the soul was first preached (*vide* Upanishads and the Bhagavat Gita) and as in consequence abstention from animal food was ordained in pre-historic times (*Cf*, the teachings of Jaina Tirthankars long before Buddha and even Rama) this legend may be traced back to India for its origin, and the statement of Wilford that a scholarly Pundit showed him in a very old and curious Sanskrit work the constellations Andromeda as Antarmeda Cepheus as Capuja; Cassiopœa as Cassopi ; and Perseus as Parasiea is not baseless. Pythagoras 500 years before Christ travelled to India and went back to Greece indoctrinated with the Philosophy of the Transmigration of the soul and abstinence from meat,

kheela muree, chál bhāja. (a) Cheeray or chūra is formed thus. Paddy or *dhan* is either boiled or subjected to a current of steam, then sun dried and threshed with a *dhaki*. Husk is then winnowed from cheera. Cheera is a light diet, and after it has been steeped in water for some time, its water is pressed out and the cheera is prescribed as food for diarrhoea patients. For men suffering from fever cheera parched with sand is prescribed. (b) Muri or laee or murmura is formed thus. Rice moistened with water is first fried in the frying pan, and then in the bhar of the bharbhujā. If some salt is sprinkled with moistened rice before it is parched in the frying pan, the muri is still more tasty. This salted muri is prepared in Bengal. In the U. P. of Agra and Oudh where the chouka system is in full swing the admixture of salt to a grain thus prepared will render it unfit to be used by any Hindu of a high class. (c) Kheela or khoee—Paddy is parched in the bhar of the bharji and then the husk is winnowed. This is sold almost exclusively during the time of the Divali in every town and village of India. (d) Chálbhaja—Rice is fried in the pan over a slow fire. Besides these 4 well known preparations there are other ways of eating rice. There are pulaos (1) made of cauliflower, of chhana, of fish and of meat, all first class delicacies, but very rich and hard of digestion, hence they cause constipation and dyspepsia if used habitually. Then there are some of the finest sweetmeats made from rice *e. g.*, the far famed Bardwan Sitabhog, and the Calcutta malpuas, as well as peethas are made from rice, while the rice-made ahipsa of the U. P. is a delicacy in its own way.

Next to rice comes wheat in importance. Wheat is ground into *atta, maida* and *suji*. If wheat is ground without

WHEAT.	
Water	... 15'0
Sugar	... 4'2
Fat	... 2'0
Salts	... 1'7
Starch	... 66'3
Dr. Edw. Smith.	

any preliminary process, there is *atta* produced, and the bran is sieved out as food for cattle and horses. But if the wheat is first soaked in water and then ground the product is *maida* which is finer than *atta* and is absolutely free from bran. *Suji* is sieved out of *maida* and is sold separately. Just as rice is the

principal cereal of the Eastern part of India, so is wheat of the North-Western part of India *e. g.*, the United Provinces, the Punjab and

Sind and of the better soils of the Central Provinces, *vide* Appendix A. Atta or flour is first kneaded and then divided into doughs which are baked upon *chati* at first and then in fire. This is the way unleavened bread is made. If a small quantity of yeast or ferment is mixed with the atta before it is kneaded there is formed the leavened bread. Leavened bread is of a spongy character and has this advantage over unleavened bread that its "starch being partially converted into sugar or diastase carbonic acid gas is eliminated and dispersed through the mass." (Foods by Dr. Edw. Smith., page 182). In some bakeries powders containing tartaric acid and bi carbonate of soda are added with the same result as to fermentation. This has the further advantage of being free from "alcohol, acetic acid, and other bodies the products of yeast action" (Domestic Hygiene by Notter and Firth, p. 158). The action of yeast is very favourable to digestion for it alters starch into maltose and dextrin and the proteids into albumoses. Bread stuffs are largely digested by mixing with the saliva. For this purpose thorough mastication of the food is necessary. Wheat is better adapted to chapati bread making than rice, oat, barley, maize or millet. Wheat is also more easily separated from the chaff than barley, oats and rice. There are various other preparations of maida and atta *e. g.*, luchis or puris, kachuries, singrahs, matris, malpoas, khurmas or balusies, khajas, gajas, haluas, halua-sohan, etc. The first two are cakes much liked by the Hindus. They are served out at banquets and there have been instances of guests at feasts reserving their appetite for making an attack upon this dish, in the absence of a lavish supply of payesh (kheer) and sweetmeats. Two or three dozens of these cakes of ordinary size make no matter with them. Kachuris are just the same as puris with some spiced and pounded *flour* in them of peas or grams or urad. They are more tasty than puris. Khasta kachuris being more liberally treated with ghee are harder of digestion and more tasty than luchis. Benares stands *facile princeps* in kachowris as well as several articles of sweetmeats; Calcutta, in malpoas, Burdwan in Khaja; and Delhi and Agra, in their Halua-Sohan. Macaroni or *Simai* is made from maida and milk and is highly relished by Hindus and Mahammedans. Mohoonbhog or *halua* is a kind of pudding made from wheat flour

(atta) or *maida* or *suji*. All these articles constituting rich food with the exception of Macaroni ought to be used sparingly. Gulgula is the poor man's malpoua for it is made in the same way except that it is devoid of khoa and dried fruits and is not fried in overflowing ghee. It is usually fried in oil. Of *haluas* or *mohonbhogs* there is a whole family—the *suji ka halua*, the *maida ka halua*, the *nashastay ka halua*, the *marwari* or *maskati halua*, the *habshi halua* and so forth. They are made of almost the same recipe as cakes with only this difference that cakes have eggs in them which haluas have not. It may be taken for granted that sweetmeats in India are free from eggs. It is only the Kashmiri Brahmans, a very carnivorous class of men, who make ladduas and golabjams and Rasugullas of goat's flesh and yet these people hold onion in abhorrence. *Jalabis* are made from *maida* and are much appreciated by both high and low. (1) Gluten is the albumen of bread or flour and may be used by itself.

After wheat we have maize, juar called the poor man's crops, and Sama, kodon, marhua the veriest poor man's crops. Maize or Indian corn is a gay looking thing in fact the most splendid of all corns, the large grains of which are ground into atta. When the grain of the maize is soaked in water and then parched in the *bhar* it does not open out into a kheela. It is finally ground into *Sattu* or meal.

The same is the process of making the *sattu* of *job* or barley, only in the latter there is a sprinkling of gram amounting to $\frac{1}{4}$ or $\frac{1}{2}$ of the quantity. Both these *sattus* are much appreciated, but that of maize is preferred to that of barley. If bad grain of maize is used it may cause pellagra which may affect the skin, the stomach, the bowels and the nervous system (Dr. Bedford). Dr. Edward Smith is very eloquent in praise of this cereal both as regards its nutritive value and the quantity in which it is produced. Bread made from maize flour is agreeable to the taste and

(1) Sir Douglas Straight, once a Judge of the Allahabad High Court, and now Editor of the *Pall Mall Gazette*, had always one *jalaiba* made to order as large as a plate, served to him every morning.

is especially so when it is mashed with milk. But maize as well as millet flour does not keep even a week, while wheat flour keeps for

months except in the wet weather. But while maize

MILLET.

Water ...12'1
Nitrogenous 9'0
Carbonaceous 74'0
Fat ... 2'6
Salts ... 2'3
Dr. Edw. Smith.

flour is supposed to be cooling in its effect, millet flour is credited with an equal quantity of heat.

Sattu cannot be made either from millet or from

juaree called also junar and junhri. This latter is

also a species of millet and is parched like maize or

millet. Barley is used in India only to be milled

into sattu. Its bread is crusty and rough and is not so nutritive

as that of wheat. Barley is supposed to be very

cooling in its effect. Barley water is however

usually given as a laxative to constipative patients.

BARLEY.

Water ...15'0
Albuminous allied Substances 6'3
Starch ...69'4
Sugar... 4'9
Fat ... 2'4
Salts ... 2'0
Dr. Edw. Smith.

Sama, Kodon, Kakun and Marhua are eaten

by the veriest poor classes. They are too starchless

to be utilised as bread, and are therefore boiled in

water like rice.

We ought to be careful with regard to the grinding of cereals. The cortex of wheat which is rich in phosphate of potassium and lime is removed by modern milling. "People throw away their potassium salts in the water in which their vegetables and rice are boiled hence also the development of cancer, which is due to the exhaustion of a natural quality of the epithelial cells consequent on the diminution in the body of potassium salts." This is the view held by Dr. Forbes Ross. I cannot resist here the temptation of writing something with regard to a point which ought to engross the attention of our farmers. Our country is year by year becoming poorer in fertility owing to the ignorance of our zemindars. In former times the skeleton of animals used to lie on the fields which were fertilised by the phosphorus of the bones. To-day these bones are all exported to Europe and America at a few annas a basket, where they manufacture scores of bottles of phosphorus mixtures out of each basket load of bones. Our soil thus loses its quantity of phosphorus and our grains are for that matter deteriorating in quality. No wonder that we are deteriorating in health also.

Vegetables.

Vegetables are rich in salts (1), but care should be taken that they are well-washed. Vegetable acids unite with potassium and sodium to form alkaline salts and are converted into carbonates in the system. Some of the vegetables possess anti-scorbutic property. They are potatoes, brinjals, cabbages, patal (parwar), radish and onions. Pumpkins, gourds and sags are not so. Spinah (palki ki sag) is much liked by the Indians and is prescribed by Indian physicians for anæmic patients. It is rich in iron-salts and is therefore valuable to our system. Stringy vegetables like stringy meat are hard of digestion, and must be eschewed. Podina, a kind of mint, is not used as sag (bhaji) but as chutneys and is an excellent anti-scorbutic. Soya ki sag has its special flavour, and so has methi ki sag (fenu-greek). Besides these there are various other sags of varying relish *e. g.*, chanay ki sag, louki ki sag, &c.

Among vegetables potatoes come first and foremost. They contain carbohydrates and are good food. They are boiled, burned, cut into slices and fried, put into *khichri* or *dhal*, or made into peethas and chops and what not? Potatoes are best boiled in their skins, while boiled and mashed potato well-spiced is used as the *poor* of singhara or of a kind of kachowri. (2) Raw plantains are also boiled and fried and have in them the taste of iron-salts. Even the spathe of the plantain, and the core of the tree go to form savoury Bengali dishes. Nothing but its thick upper barks and its leaves is thrown away in a Bengali kitchen. (3) Sweet potatoes (shakar-kund) is an excellent edible article and may be used both as a substitute for potatoes or in the manufacture of sweetmeats like peethas. It is a very common food both as boiled and baked or burnt. There are two kinds of them, the red and the white : the former is sweeter

(1) The mineral salts comprise chlorides of sodium and potassium, phosphates of potassium, calcium and magnesium, various salts of iron and some sulphates. The chlorides contribute to the formation of the hydrochloric acid of the gastric juice, while the phosphates of lime, potash and magnesium, help in the formation of the bone.

than the latter (4) brinjal is first cut into slices and then fried in rapeseed oil in the pan, or is cut into pieces and mixed with potato to form a vegetable preparation. With fish it forms various highly prized Bengali dishes. It is the vegetable for Khetaees. It is also boiled with rice, and when its skin and stringy fibres are removed it is well mashed with a sprinkling of rape-seed oil and salt and chilly and a few boiled *baries* of *urd*, and is used as a *tarkâri* or *salan*. (5) Patal or parwar is used chiefly as *tarkari*, and is an agreeable substitute for potatoes when we get tired of them in the months of Chaitra, Baisakh and Jaishtha. (6) Radishes are a tribe of strong smelling vegetables having a pungent and acrid taste. Jounpur radishes are the largest of their kind being 5 or 6 inches in diameter, and proportionately long, and having little fibrous substance in them. Some people hate them for their odour: and they have really a very disagreeable odour when they are boiled in a pot and their water is thrown out. Radishes eaten raw in however small a quantity cause very stinking eructations. (7) Cabbages rival radishes in their obnoxious smell particularly when they are boiled in a pot and the water is poured out. They lend themselves to various kinds of dishes, just like radishes. (8) Cauliflower or gobhi belongs to the cabbage tribe and is delightful eating: but like potatoes and cabbages it requires heavy manure for its growth. A kind of pulao is made of cauliflower and potatoes together with a sprinkling of peas. It is a purely vegetarian dish and as it is prepared exactly according to the recipes for meat or fish pulao it is almost as savoury as either of these. Cabbage tribe should be boiled twice in order that its noxious ingredient may be eliminated. Over-boiling to a soft pappy condition is to be avoided as it then becomes hard of digestion. (9) *Man Kochu* or *bânda* is a good substitute for potatoes. In some parts of Bengal e.g. Baruipur on the Sealdah line it grows so large as to weigh more than half a maund or nearly a maund, while its leaves are large enough to cover a man, somewhat smaller than a plaintain leaf but much broader than it. It produces a prickly sensation when its tubers are cooked. (10) Kochu or ghuyian is the beloved dish of the people of the United Provinces of Agra and Oudh. They make

preparations *ad nauseam* of this vegetable at their banquets. It figures in Chand Bardai's pages where Rae Pithoura's feast is described. (11) Raw Kathal or jack fruit is used as vegetable. (12) Kalai-shoonti or matar or peas is the rival of potatoes as regards its being savoury. It is boiled and mixed with a sprinkling of salt, tamarind core and chillies. This preparation is sold

in the market and is much relished by the

PEAS.

Water	...	14'1
Caseine	...	23'4
Starch	...	37'0
Sugar	...	2'0
Gum	...	9'0
Fat	...	2'0
Woody		
Fibre	...	10'0
Mineral		
Matter...	...	2'5
('Dr. at Home' by Geo. Black).		

young and the old, the rich and the poor, just as its rival Kachaloo is done. Its Khichri is as savoury as pulao, while it heightens the flavour of any dish of which it forms a part. Its Kachowris are delicacies. Cheera fried in ghee is mixed with Kalai-shoonti fried in ghee according to a certain recipe and forms a very savoury article. (13) Lubhia, of which the ata forms the main ingredient of Bardwan sitabhog, (14) Sem, (15) Bhindi (ladies finger), (16) Karela, (17) Uchhay, (18) Tori, (19) Chichinga,

(20) Beetroot, (21) Turnips, (22) Kadu or squash, (23) Louki or pumpkin almost complete the list of our vegetables. To this may be added (24) unripe papitas, and an infinite varieties of dishes may be prepared from these side by side with the vegetables there are the dhals or vetches or pulses *e.g.* arhar, chana (gram), matar, masur, mung, kalae, aksa, etc.

(1) Arhar is used only as pulse. Its *Khichri* is rich and savoury. This dhal is very tasty and is a rival of meat in nutrition. It is the main dish of the Hindu, the staff of his life.

(2) Chana or gram is used not only as pulse but as sweetmeats. We have chana ki patti, a cheap and wholesome sweetmeat within reach of the poorest, and sold in large quantities in every city. The celebrated *mihidana* ladhus of Bardwan are prepared from chana or gram. Then there are sweetmeats made from besan or milled gram, the besani laddus, the nukti ka laddus and bundiyas. Besides these there are the *namkins e. g. dalmote* and *chanachur*. When King Edward VII, of blessed memory, came out to India as Prince of Wales in 1875, and visited Calcutta, the people of Bengal served

him with their choicest dishes and sweetmeats. The Prince admired chana choor most of all.

(3) Matar is used as dhal and for bari. It is sometimes boiled with rice and treated in the same way as potatoes, bandas and brinjals.

(4) Masur is supposed to be a dry pulse and is therefore better cooked with copious ghee. It is forbidden to widows.

(5) Mung is the most easily digestible of all the dhals, but it has a strong smell in it which can be got over with free use of ghee. Laddus made of it are much relished.

(6) Kalae is hard of digestion. A dish is made in Bengal of unbroken Kalae, Brinjal, potatoes, sweet-potatoes, and peas all boiled together. It is like the Spartan black broth and is an equally heavy food. Raja Raim Singh of Bharatpur, a very powerful man, was very fond of Kalae ki dal, and never liked to take any other food than chapatis and this dhal with one pan of ghee. The well-known sweetmeat Amriti is made from this dhal.

(7) Aksa is so full of noxious ingredients that it is to be used only sparingly. The baneful effect of a too free use of this dhal as an article of food has been noted by Genl. Sir William Sleeman and is mentioned above.

Chillies are good appetisers if taken in moderate quantity, but are very injurious to liver if taken in excess. Very hot and pungent *pakowris*, *kachaloos* and *matars* must be avoided. Onions, garlic and ginger are not eaten by themselves but as adding to the flavour of vegetable preparations or of dhal. The Cashmere Brahman with all his meat eating propensities is a total abstainer from onion, while the Mahratta Brahman who is an uncompromising vegetarian is "partial" to it. Salt, chillies, red-pepper, vinegar, cardamoms, black-pepper, pepper, pepper-mint, cloves, ginger, lime-juice, mustard, etc., are used as condiments and expel wind from the stomach. But they must not be used except very sparingly.

Fruits.

Fruits contain sugar and acids and are effective anti-scorbutics. Dr. Haig dismisses the whole lot of garden fruits with the remark that they contain only water and a very small quantity of sugar and acid. But they are nevertheless delicacies, and man cannot convert himself into such a hygienic toy as to forego these pleasures once in a way at the dictates of a doctor. Moreover the science of hygiene is yet inchoate. Properties of things are not definitely known. For instance tea is condemned by one set of doctors and extolled by another. The vegetable acids are tartaric from grape-juice; citric from lemons; malic from apples; oxalic from rhubarbs; and acetic from vinegar. "These acids exist mainly in fresh fruits and vegetables either as free acids or in combination with alkalies as alkaline salts, and in the body form carbonates, which exercise a controlling influence in preserving the alkalinity not only of the blood but of other fluids; they also furnish a small amount of energy and heat by oxidation." (Practical Domestic Hygiene by Cotter and Firth). Diminution of these acids in the system will cause scurvy.

(1). Mango is the king of fruits and has a whole family of its own. Mangoes are of various shapes and colours; light green, deep green, yellow red, in colour; and are longish, roundish and ovalish in shape. The best mangoes are (a) the Tikari or Benares Kalangra; (b) the Gopalay Dhoba of Bengal which is sometimes one foot in length; (c) the Maldah of Bengal which is a huge fruit; (d) the Fazli of Bengal; (e) the Bombay of Bombay; (f) the Dischri of Lucknow and (g) the Sufaida of Lucknow and so forth. It will take more than a page only to enumerate the varieties of this fruit. It is called in India *am*, *amba*, *amiya*, which are corruptions of Sanskrit *amrie*, *amrit* or nectar. And it is doubtless a nectar in taste, a delicacy for which one is often disposed to contravene the rules of hygiene. Mango is eaten from the time it assumes its shape from the blossoms until it is ripe and even over-ripe. When in its embryonic stage it makes a good dish of *khataee*; but when it is still larger

<p>MANGO RAW.</p> <p>Water ...90.69</p> <p>Proteids ...0.59</p> <p>Carbohydrates ...3.38</p> <p>Salts ...0.27</p> <p>Acid ...1.93</p>	<p>own. Mangoes are of various shapes and colours; light green, deep green, yellow red, in colour; and are longish, roundish and ovalish in shape. The best mangoes are (a) the Tikari or Benares Kalangra; (b) the Gopalay Dhoba of Bengal which is sometimes one foot in length; (c) the Maldah of Bengal which is a huge fruit; (d) the Fazli of Bengal; (e) the Bombay of Bombay; (f) the Dischri of Lucknow and (g) the Sufaida of Lucknow and so forth. It will take more than a page only to enumerate the varieties of this fruit. It is called in India <i>am</i>, <i>amba</i>, <i>amiya</i>, which are corruptions of Sanskrit <i>amrie</i>, <i>amrit</i> or nectar. And it is doubtless a nectar in taste, a delicacy for which one is often disposed to contravene the rules of hygiene. Mango is eaten from the time it assumes its shape from the blossoms until it is ripe and even over-ripe. When in its embryonic stage it makes a good dish of <i>khataee</i>; but when it is still larger</p>
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about $\frac{1}{4}$ its full size it is too acidulous to make a very palatable dish. Jagree or gur is then put into the khataee to form a wholesome dish. There are a lot of *achars*, *murabbas* (preserves), *chatneys* (pickles) made from mangoes. The well-known Bengali *kasundi* is made from mangoes. The expressed juice of ripe mangoes is laid out in plates and dried in the sun. This is known as *amsattya* or *amawat*, and is eaten either by itself or with warm boiled milk. *Kalmiam* should not be eaten ravenously.

(2). Plantains are very delicious fruits of which there are numerous species, though not so many as those of mango. This fruit grows in Bengal, Madras and Bombay in abundance. There is scarcely any fertile part of India where plantains does not grow, though it may be admitted that the plantains of the United Provinces of Agra and Oudh do not attain the perfection of those of Bengal, Madras or Bombay. The famous species of Bengal plantains are *Champa*, *Chatim* or *Martaban*, *kanthalce* and *Agneeshwar* of Dacca, while the Bombay plantain is noted throughout India for its crimson colour, delightful taste and ample size. Plantains are unlike mangoes somewhat cooling in effect. There is scarcely any part of plantain which is not of use to civilised man now that its fibres are manufactured into textile fabrics.

(3). Kathals, Jack fruits or jacks are of two well-known species, one with soft, pappy pulps and the other with stiff pulps. A full sized jack weighs 30 seers. It is heavy of digestion. Its juice is usually pressed out and strained through a neat cloth and is then eaten.

(4). Cocoanuts thrive along the seashore in a temperate country.

COCOANUT.	
Water	46.6
Albumen	5.5
and Oil	35.9
Sugar	8.1
Cellulose	2.9
Mineral matter	1.0
("Doctor at Home" by Dr. Black.)	

Bengal, Madras and Bombay produce this fruit. It does not thrive in U.P. which is far away from the sea. There is one cocoanut tree in the garden of the Taj at Agra but it bears no fruit. There are three stages of this fruit (a) the *neyapati* when milk is more abundant than its "flesh" or cream which is a very thin lining inside the shell. The milk is known in Bengal as *Dab* and is a very nutritive beverage, while its "cream" is a veritable cream in taste.

(b) The Durmo, in Bengali, thickens into a crust. Both the milk and the "flesh" are excellent eating, and this milk also is known as Dab.

(c) When the creamy crest or solid kernel is yet harder it is known in Bengali as *jhoono*. The milk then is slightly brackish and the kernel or copra is a delicious food. (d) When the kernel or copra is completely dry it is called in Bengalee *khorelee*. This kernel is not eaten in Bengal but is given away to the oilman to press oil out of nearly all the far-famed confectionery of Bengal have *chhana* or *khoa* (kheer) and the jhoons kernel scraped into thin filings as their indispensable ingredients. According to Dr. Osler cocoanut is *the* food for a diabetic patient.

(5) Water-melon (tarbooz) and (6) musk-melon (kherbooz). The latter of the two is copiously eaten whenever it grows. Water-melon grows to perfection along the banks of the Ganges at Far-rukhabad and Cawnpur where the larger ones weigh fully $\frac{3}{4}$ ths of a maund and even more and are luscious in taste. Musk-melon on other hand flourishes well along the banks of the Goumti at Lucknow and Jaunpur, and along the banks of the Jamna at Agra and Muttra. Emperor Jahangir says in his Tuzak Jahangiri, that his father the great Akbar, passionately loved eating grapes, pomegranates and sarda water-melon. The Agra water-melon seems to be a descendant of that planted by Akbar and well deserved this encomium. It weighs more than 5 seers in weight, is shaped like an enormous pear, and has a rough greenish skin, with very thick, sweet green pulp so sweet that the lips seem to stick together when the pulp is eaten. It is known as Tomri from its shape.

(6) Oranges (narangi). There are several varieties of this fruit (a) Sylhet kamla, (b) Nagpur santra the finest of their kind both as to fragrance and taste. The *sharbati* or mitha is inferior in flavour to either of the above but is sweet, while the common naran-gi of the United Provinces is as sour as tartaric acid. Citron or chakotra is vulgarly supposed to belong to this species.

(7) *Shareefa, ata* (custard apple) grows wild in some places in India. But for its numerous seeds it is excellent eating

and in flavour it out-rivals many other fruits. Nagpur is famous for its *shareefa* too.

(8) *Poundas* or sugar-canes are the principal source of sugar supply in India and grow here extensively from time immemorial. The word sugar, from Latin *succarum*, Arabic *sakkar*, Persian *shakar*, Sanskrit *sharkara*, tells in its own way how the world is indebted to India for the manufacture of this article.

(9) *Singharas* grow in ponds and jheels. They are eaten green called *doodhiya* or milky, boiled and parched. They are also dried up and ground in mills into *ata* which is extensively employed in the manufacture of sweetmeats.

(10) Guavas-amrud various varieties. The best species grows in and about Allahabad.

(11) *Kul* or *ber*. This grows to perfection in various places—chiefly in and about Lucknow and Fatehpur Haswa. It is cooling in its effect.

(12) Bael improves digestion. Its jelly is given to patients suffering from diarrhoea. The pulp of bael is separated from its gluey seeds which are injurious, and is either eaten by itself or is made into *pàna* or *sherbet*. The pulp is mixed and mashed with water and *gur* or sugar and curd and strained through a thin cloth. A drop or two of *keora* or *gulab* and some ice added to the beverage will improve its flavour. It is supped with zest on a warm summer's coming and is highly refreshing.

(13) Tamarind from which Tartaric acid is extracted is used as a *khatai* or as a sauce or for the purpose of acidulating our dishes. *Kasundi* is prepared from mango, tamarind and various other things. Ripe tamarind core mashed with *gur* in a sufficient quantity of water is a delicious repast with rice.

(14) *Papitas* or papaws—are excellent food though with rather a strong smell in them. They are very cooling and are given in Bengal to people suffering from insanity.

(15) *Mahua* is the food of a very large number of indigent people of these provinces who make cakes of mahua and *ata*. But this is not good diet when used exclusively for bread, for it impairs the health of those who consume it in large quantity. Mahua is especially known for the liquor extracted from it. This is highly admired by those using it for its property of purifying the blood and promoting digestion. (16). Leeches, (17) Jamun, (18) Phalsa, (19) Khirni, (20) Gulabjam, (21) Lemons, (22) Kasur, (23) Phuti, (24) Kheera, (25) Kakri are some of the fruits eaten as *jalpan*. Of these kheera is hard of digestion and is eaten very sparingly, by the upper classes, but is an article of food of the poorer classes just like *kharbooz* and cheap ripe mangoes. (26) Apple and (27) Pear, and dried fruits like (28) almonds (*badam*), (29) Kishmish (raisins), (30) *pesta*, (31) *Khojur*, (32) ground nuts (*Moongphali*) are nutritive. Nuts contain twice as much albumen as bread in the same bulk. They may be taken a table-spoonful, more or less. They do not contain starch and therefore do not give rise to starch dyspepsia and well regulate bowels. (From Dr. Alex. Haig's Diet and Food). Groundnut oil is adulterated by dishonest traders with pure ghee and the compound is sold as pure ghee. The food is not wholesome, but there is no help for it as long as the moral character of these monopolists does not improve.

Fish and Flesh.

	Ox.	Fowl.	Pig.	Sheep.	Calf.
1. Muscular fibre free from fat	...25·0	24·9	24·3	23·4	22·7
2. Fat...	... 2·5	1·4	6·0	3·0	2·9
3. Water	...72·5	73·7	69·7	73·6	74·4

Foods by Dr. Edward Smith.

Dr. Edward Smith waxes eloquent in praise of beef, and says that it gives more nutrition than any kind of flesh. But for this partiality we may excuse him when we find that "roast beef" as Burke has said, is the characteristic dish of the British, a dish of which they are as proud as the Spartans were of their black broth.

The Frenchman and the modern American with their frog-eating, the Germans with their horse-eating, the Chinese with their dog-eating, the Burmese with their lizard-eating, the Nomad Arabs with their camel-eating, and when occasion requires hyæna-eating, the Gypsies (Kanjars) with their bat, crow and snake-eating, the Green-landers with their whale-eating, the Fiji-Islanders and the Patagonians with their man-eating propensities present anomalies which make one look aghast and scarcely believe his senses. (1) Millions of cattle are annually slaughtered in America for Liebig's Extract of Meat Company alone, while the pigs of Servia and the poultry of France are the principal sources of the revenues of their respective countries. But beef, pork and fowl are abomination to a Hindu, and pork itself is an abomination to Musalmans. To expatiate upon the merits of these foods is unnecessary, for scarcely any Hindu takes kindly to them. So strong is the Hindu feeling against animal food that even when dire famine oppresses them, the Hindus prefer to die rather than take to it. Popular belief ascribes a few fell diseases to the use of beef *i. e.*, leprosy and cancer. It is the popular belief of the Bengalis that Justice Dwarkanath Mitter of the Calcutta High Court in the sixties and seventies fell a victim to cancer because of his habit of eating beef, and riding rough-shod over the hygienic regulations of society. It is however a noticeable fact that even European soldiers take only the soup of beef with bread or biscuit but generally throw away the meat. Dr. Bell is of opinion that meat diet is the cause of cancer, and maintains that in France it does not prevail to the extent that it does in England. A glance at the plates of his work "The cancer scourge and how to destroy it" will show the difference between the bloods of the vegetarian and the meat-eater. Animals are subject to diseases and contain parasites which are transmitted to those consuming their meat. Pigs have two well-known parasites both of a

(1) Lady Anne Blunt says that in her travels to Nejd she was treated to a dish of camel's flesh as well as of hyæna. She ate the meat of camel which looked black and repulsive, but could not persuade herself to eat hyæna. The Burmese King sent to Lord Amherst, Governor-General of India, preparations of lizard, while cock-chaffer and such insects are publicly sold in a Burmese market as articles of food. *Vide* a highly interesting article entitled "Strange foods" published in Cornhill's Magazine, July 1889.

very dangerous character. Flukes exist in the liver of sheep, cysts affect sheep and cattle. Tubercle is common amongst cattle, while tenuicollis is found in the peritoneum of sheep and goats in India. The skull of the sheep as well as of the goat contains horrid worms which crawl about when the head is cut open. According to some doctors even the milk of the cow transmits scarlet-fever under certain unfavourable circumstances. Besides this meat produces uric acid which retards the free circulation of blood through the tissues while its absence promotes albumen and throws away the waste products. This uric acid is a cause of the irritation which predisposes to cancer (Dr. Haig). Cancer is a kind of fungus, and like a fungus grows only in the dark and relies for its supply upon dead or dying matter upon which it locates itself (Dr. Bell). That meat is not the natural diet of man may be judged from his canine teeth which are blunt and small, unlike those of a meat eating animal like the dog and the cat whose canines are disproportionately larger than their other teeth. Besides, the intestines of a meat-eating animal are small, unlike those of man which are enormous. Man has, however, accustomed himself to meat eating, in the same way as Norwegian cows have been accustomed to feed upon fish. These are physiological arguments against meat-eating. From an æsthetic point of view it is no less objectionable. A meat-market with its stench and flies, and crows and kites and mangy dogs—all unavoidable adjuncts to a meat market—presents a most disagreeable spectacle. A picture of fruits is far more attractive than the picture of a dish of meat or fish. From a religious point of view meat or fish is objectionable. The Bhagwat Gitta declaims against this food. Its illustration of the Sattvic food corresponds with the diet of milk and fruits and cereals; of the Rajasic, with among others fresh meat and fish well-cooked; and of the Tamasic, with among others salted or smoked or cured meat or fish. The Biblical quotation given at the beginning of this Essay is no less emphatically vegetarian. Meat diet is not necessary to activity of thought (1). LaGrange, the great

(1) Of the millions of Jainas in India not one is ever convicted of a criminal offence while their Premchand Roychand of Bombay and Mr. Gandhi of South Africa are names to conjure with contrast this with the depraved condition of Societies given to meat and drink.

French mathematician, in fact the world mathematician—was a strict vegetarian while I am told that all the great mathematicians of Europe have been studious vegetarians. Europeans as a rule take more care of their health than we. Within their limited household sphere they are comparatively free from the wear and tear of life, which haraas us. Their pecuniary status is unexceptionable and they have plenty of sports, exercises, amusements, diversions, shikars, trips and voyages. Nevertheless there is scarcely any European of 35 who has all his teeth in his mouth. This is due very likely to his bad digestion which is an incontestible proof of the deleteriousness of meat.

Fish may be divided into numerous species. The celebrated *Hilsa*, *Bhangan*, *Bhetki*, all make dainty dishes. But they are too full of fat to be wholesome foods. The *Rohu*, the *Tapsey* (the mango-fish) are delicious and favourite dishes, while the *Magoor*, and the *Sing* are said to be nutritious food and are prescribed for weak patients. People living exclusively upon fish "are particularly liable to become leprous" when they cannot get vegetables or any other kind of diet in sufficient quantity. (Dr. Edward Smith-Foods, p. 106). Fish-eating people are not so vigorous as flesh-eating nations. Dr. Edward Smith recommends fish as food for people "who perform much brain-work or who are the victims of much anxiety and distress," (*Ib.* p. 106) because of the large proportion of phosphorus which it contains. It is, however, yet a disputed point whether fish actually contains as much phosphorus as is usually supposed, for some modern doctors deny it altogether. But fish is a dirty eather and as such cannot make wholesome food if not taken with due precaution. The flavour of the *Hilsa* of Bengal 80 years ago, so discussed Dr. Rajendra Lall Mittra in the eighties in the "*Hindu Patriot*", was not to be equalled by that of its descendants. Dr. Mittra attributed this excellence to its feeding on garbage. The river Hughli of those days flowed a current of dirt, and the *Hilsa* feeding upon this unsavoury diet was served up as a savoury dish for the Bengali epicures. Now that the river is kept clean the old flavour of this fish is gone. So it was this refuse which added to the savour of the *Hilsa* 80 years ago

From what has been said above cancer, leprosy, dyspepsia and numerous other diseases are all traceable to the use of fish and meat. These are all lingering and deadly diseases, and render the life of the sufferer a curse, an anathema. Woe be to the man who knowing this consequence will still indulge in this luxury and refuse to take caution. Both from a physiological and psychological point of view fish and meat diets are to be condemned. They make, moreover, the heart of man incredibly brutal and cruel. I shall never forget the shock I felt in 1886 when I saw a European soldier kill a bright little singing bird while she was singing and regaling us with her song. The pellet entered her throat and she fell down dead with her mouth open, and this he did only to see whether the gun he was going to buy was true in its aim or not. He gave no more thought to the poor bird he had killed; to the great disgust, of those present, than if he had killed a bug or a rat. On another occasion I saw another soldier lifting a puppy spaniel—a very tiny puppy from the ground and beating it upon the ground in the same way as a washerman thrashes his cloth, and throwing its little carcass into the Ganges. And this he did because the puppy had not come at his call. On another occasion I saw a soldier throwing his terrier into the river with his front legs and hind legs tied in twos. The dog somehow or other managed to come back to the bank. He then called it again, tied his four legs together and threw him into the river!!! This monstrous cruelty is not confined to soldiers. In 1898 I had occasion to remonstrate with a European Headmaster for his killing a *dahial* a beautiful singing bird in his garden. The beauties of the peacock and of the wild duck, the wild bucks fetching leap upon leap in the jungle, and the cranes the type of conjugal fidelity at their repose in a wheel furnish no other feeling to the callous-meat-eater than that of prospective pleasure at eating their meats. Our education is a farce, religion a mummary, and civilisation a sham, if our hearts are not softened and our nature is dull to æsthetic influences. A thing of beauty is a joy for ever. But here there is an inexplicable crusade waged against half the creation which God has created for some moral or physical purpose known to Him alone. Even the infinite “unbeginning and unending” sea cannot afford safe shelter to its

denizens from the ravages of man. The whale, the seal, the cod and the herring are being exterminated ruthlessly. The white rhinoceros is already extinct, while the wild elephant and the lion and other wild animals are becoming annihilated year by year. Creation reeks with blood and the voice of Nature gives warning to the knowing ones "Thus far and no further."

APPENDIX A.

*From Dr. Waddell's Medical Jurisprudence.***Digestion Chart.**

1	Wheaten bread	...	...	...	...	...	3	to	4	hrs.
2	Milk raw	...	...	...	...	...			$2\frac{1}{2}$	"
3	" boiled	...	...	...	...	...			2	"
4	Cucumber	...	...	...	...	...			$4\frac{3}{4}$	"
5	Melons	...	...	...	...	...			3	"
6	Nuts	...	...	...	...	...			4	"
7	Oranges	...	...	...	...	...			$2\frac{3}{4}$	"
8	Pears ripe	...	...	...	...	...			2	"
9	Pineapple	...	...	...	...	...			$2\frac{3}{4}$	"
10	Bannana (kela)	...	...	...	...	...			$1\frac{3}{4}$	"
11	Fish (white) boiled	...	...	...	...	...	2	to	3	"
12	Lobster and crabs	...	...	...	...	...			4	"
13	Beef (boiled)	...	...	...	...	...			3	"
14	" (roasted)	...	...	...	...	...	3	to	4	"
15	Mutton boiled	...	...	...	...	...			3	"
16	" roasted	...	...	...	...	...	3	to	$3\frac{1}{2}$	"
17	Pork roasted	...	...	...	...	...			5	"
18	Poultry boiled or roasted	...	...	...	...	...	$2\frac{1}{2}$	to	4	"
19	Veal...	...	...	...	...	...			$4\frac{1}{2}$	"
20	Eggs, raw	...	...	...	...	...			$1\frac{1}{2}$	"
21	" fried or boiled hard	...	...	...	...	...	3	to	$3\frac{1}{2}$	"
22	Cheese	...	...	...	...	...	3	to	4	"
23	Apple	...	...	...	...	...	3	to	4	"
24	Cabbage	...	...	...	...	...	$3\frac{1}{2}$	to	4	"
25	Cauliflower	...	...	...	...	...			2	"
26	Carrots	...	...	...	...	...	3	to	$3\frac{1}{2}$	"
27	Potatoes	...	...	...	...	...	$2\frac{1}{2}$	to	$3\frac{1}{2}$	"
28	Turnips	...	...	...	...	...	$3\frac{1}{2}$	to	4	"
29	Rice, Sago, Tapioca (completely cooked)	...	...	...	...	...	1	to	2	"
30	Tomatoes	...	...	...	...	...			$2\frac{1}{2}$	"
31	Peas (green)...	...	...	...	...	...			$2\frac{1}{2}$	"
32	Spinach	...	...	...	...	...			$1\frac{1}{2}$	"
33	Radishes	...	...	...	...	...			4	"

APPENDIX B.

*From Dr. Robert Bell's "The Cancer Scourge
and How to destroy it."*

Breakfast.

Some kind of fruit, dried or fresh, such as an apple, pear, orange, melon or a couple of bananas, figs, dates, prunes, sultana or other raisins, brown bread and butter, and egg and a cup of China tea infused not more than a minute.

Lunch.

A fruit or vegetable salad, brown bread and butter and cheese or an ounce of nuts of any description instead of cheese.

Dinner.

Soup, the stock of which is made by boiling haricot beans, lentils, peas or broad beans, which should be thoroughly macerated and the liquid strained off.

1. When it comes to the table, and is ready for eating, a tablespoonful of carrot, onion, turnip, parsnip or celery juice for each person should be added and it should be seasoned to taste.
2. A salad of tomatoes, lettuce, cucumber, radishes or celery or boiled sliced beetroot.
3. Macaroni and grating or cauliflower and grating, a milk pudding or cold shape with jam or marmalade and cream.
4. Fruit in its season and nuts.
Stimulants of the best quality may be taken. Fruits fresh or dried and salads should never be omitted.

APPENDIX C.

From Elementary Hygiene by Dr. Charles H. Bedford.

A.—*For Bengalis doing light work.*

(1) Early morning meal :—

Boiled rice 3 chitaks with a little dhál and vegetables; or
átá—2 chks. as chapati with $\frac{1}{2}$ chitak of salt with a little
ghee and vegetables.

(2) Meal at mid-day :—

Rice 5 chks.	Dál, fish or meat $1\frac{1}{2}$ chks.	vegetables 2 chks.
Ghee or oil $\frac{1}{2}$ chk.	salt $\frac{1}{2}$ chk.	condiments $\frac{1}{2}$ chk.

(3) Meal at night :—

Same as at mid-day.

B.—*For Bengalis doing hard work.*

(1) Early morning meal as for **A.**

(2) Mid-day meal :—

Rice 6 chks.	Dál, fish or meat 2 chks.	vegetables 2 chks.
Ghee or oil $\frac{1}{2}$ chk.	salt $\frac{1}{2}$ chk.	condiments $\frac{1}{2}$ chk.

C.—*For natives of Punjab, U.P. of Agra and Oudh, Behar &c.,
doing light work.*

(1) Morning meal :—

Wheat or maize flour 2 chks.	Rice $1\frac{1}{2}$ chk.	Ghee and vegetables $\frac{1}{2}$ chk.
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(2) Mid-day meal :—

Wheat or maize flour 1 chk.	Rice $2\frac{1}{2}$ chks.	Dál $1\frac{1}{2}$ chk.
Vegetables 2 chks.	Ghee or oil $\frac{1}{2}$ chk.	Salt $\frac{1}{2}$ chk.
condiments $\frac{1}{2}$ chk.		

(3) Meal at night exactly as at mid-day.

D.—If doing hard work.(1) Morning and night meals as in **C**.

(2) Mid-day meal :—

Wheat flour 3 chks.	} Gheo $\frac{1}{4}$ chk.
or maize flour $3\frac{1}{2}$ chks.	

The Bill of fare given above may, if we eliminate meat and fish, be properly styled a vegetarian one. The Japanese are all but vegetarians, only fish is very much in evidence at their table. In his beautiful work "*un Touriste dans l'extreme Orient*," M. Edmond Cotteau says at pp. 75-76 "Naturellement, nous n'avons à notre disposition ni couteaux ni fourchettes ; c'est à l'aide d'une paire de petits batonnets qu'il faut decouper le poisson et en porter les fragments à sa bouche.....Le tai est un gros poisson rouge, très estimé ici, et que les Japonais preferent manger cru, mais à la condition qu'il soit tres frais ; aussi les hôteliers, désireux de prouver la qualité de leur poisson, s'arrangent—ils de manière à la taillader, delicatement pour ainsi dire, afin que la victime conserve encore un reste de vie lorsqu' elle parait devant les gourmets"—This cutting is given in refutation of the statement that the Japanese are vegetarians.

APPENDIX D.

*From Dr. Nield Cook's course of Lectures on Hygiene
delivered in 1899.*

		Water.	Proteids.	Carbo- hydrates.	Salts.	Fat.
Bread wheaten	...	40·00	8·00	49·20	1·30	1·50
Wheat flour	...	15·00	11·00	71·20	0·80	2·00
Byley meal	...	11·30	12·70	71·00	3·00	2·00
Rye	...	13·50	13·10	69·30	2·10	2·00
Rice	...	10·00	5·00	83·20	0·50	0·80
Maize	...	13·50	10·00	64·50	1·40	6·70
Millet	...	12·30	11·30	67·30	2·30	3·60
Arrowroot	...	15·40	0·80	83·30	0·27	...
Peas	...	15·00	22·00	53·00	2·40	2·00
Potatoes	...	74·00	2·00	21·00	1·00	0·16
Carrots	...	85·00	1·60	8·40	1·00	0·25
Cabbage	...	91·00	1·80	5·80	0·70	0·50
Butter	...	7·50	1·00	...	1·00	90·50
Eggs	...	73·50	13·50	...	1·00	11·60
Meat best quality	...	74·40	20·50	...	1·60	3·50
Cheese	...	36·00	31·00	...	4·50	28·50
Milk	...	86·80	4·00	4·80	0·70	3·70
Cream	...	66·00	2·70	2·80	1·80	26·70
Sugar	...	3·00	...	96·50	0·50	...

